CITY OF ROME

TANNERY ROAD LANDFILL

OFF-SITE INVESTIGATON WORK PLAN

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1.0 INTRODUCTION

The New York State Department of Environmental Conservation (NYSDEC) has expressed concern over potential leachate or contaminated ground water seeps located northeast of the landfill. The NYSDEC has requested that the City submit a work plan for the investigation of off-site contamination and alternatives for controlling the landfill leachate as required in the Record of Decision.

Pursuant to the request from the NYSDEC, this work plan provides a proposed scope of work and procedures for the investigation of adjoining properties for potential leachate and contaminated ground water seeps. The results of this investigation will be used to determine if alternative procedures for controlling landfill leachate are required. If the report determines that alternative procedures are needed, the City will submit a report describing potential alternatives for controlling landfill leachate and a plan to implement these alternatives.

2.0 SCOPE OF WORK

The following tasks would be implemented to evaluate the extent of leachate or contaminated ground water outbreaks on properties adjacent to the landfill.

- Reconnaissance of surrounding properties to determine presence of leachate or contaminated ground water outbreaks.
- Collection of samples from any identified leachate or ground water outbreaks
- Collection of surface water samples from Canada Creek
- Collection of ground water elevation data from all on-site monitoring wells during the monthly operation and maintenance inspection.
- Collection of groundwater samples from additional ground water monitoring wells
- Submittal of a report presenting the results of the investigation.

2.1 Reconnaissance of Surrounding Properties

The surrounding properties will be thoroughly inspected to attempt to locate any leachate and ground water seeps. A global positioning system unit will be used to document the approximate location of all seeps. The surrounding property reconnaissance will focus on the property to the north, northeast, east and southeast of the landfill. Ground water analytical data indicate that ground water to the west and south of the landfill does not exhibit elevated concentrations of landfill related constituents.

A reconnaissance along the banks of Canada Creek will be performed to determine if there are

any seeps located along the banks of the Creek. Additionally, an inspection along the entire length of the intermittent stream that flows into Canada Creek from the area located east of the landfill will be performed.

The off-site reconnaissance will be conducted in March 2003 after all snow cover has melted. Ground water elevation data indicate that the highest ground water elevations generally occur in March or April.

2.2 Ground Water and Leachate Seep Sample Collection

Samples will be collected from a maximum of five ground water and/or leachate seeps and submitted for laboratory analysis. If more than five seeps are identified, samples will be collected from the seeps that are located closest to the landfill or that exhibit the highest flows.

If the seep is free flowing, the samples will be collected by directly immersing the sample containers in the seep. Alternatively a dedicated dipper container will be used to collect the sample and the laboratory sample containers filled from the dipper container. A new dipper container would be used at each location to avoid cross contamination.

If the seep is not free flowing, a shallow pit will be dug at the seep location. Once the pit has filled with aqueous flow from the seep, the laboratory containers will be filled by directly immersing the containers in the flow or by first filling a dedicated dipper container and filling the laboratory containers from the dipper container.

2.3 Canada Creek and Intermittent Stream Surface Water Sample Collection

A background surface water sample will be collected from Canada Creek upstream of the landfill and any surface water discharges from the direction of the landfill. One surface water sample will be collected from Canada Creek downstream of the confluence of the intermittent stream that flows from the area east of the landfill to Canada Creek and one sample will be collected from Canada Creek downstream of the landfill. A sample will also be collected from the intermittent stream that flows into Canada Creek from the area east of the landfill. If any seeps are identified along the west bank of Canada Creek, samples will be collected from a maximum of two seeps. If more than two seeps are located, then samples will be collected from the two seeps that appear to exhibit the highest flows and or indications of potential contaminated ground water (i.e., staining, odors, foaming).

The seep samples and the sample from the intermittent stream will be collected by direct immersion of the sample containers or by filling a dedicated dipper container and filling the laboratory containers from the dipper container. The stream characteristics at the proposed sampling point on Canada Creek will determine the method of sample collection. If the stream in the area where the sample is to be collected is well mixed and less than twenty feet wide and three feet deep, a single grab sample will be collected at mid-depth in the center of the channel. If the stream is greater than twenty-foot wide, then the stream will be divided into three sections of equal width and individual grab samples collected from each section. The grab samples from the three sections will be composited into a single sample that will be submitted to the laboratory

for analysis. For any section greater than three-foot deep, a vertical composite sample will be collected that consists of a grab sample collected just below the surface, at mid-depth and just above the bottom. The depth composited sample will represent the sample for the stream section and will be used in creating the composite stream sample (one sample from each of the three stream cross sections of equal width).

2.4 Sediment Sample Collection

One sediment sample will be from the drainage feature adjacent to the walkway located on the bed of the former railway line. This represents the area with the highest potential for human exposure to potentially impacted sediments. A background sediment sample will be collected from Canada Creek upstream of the landfill and any surface water discharges from the direction of the landfill. One sediment sample will be collected from Canada Creek downstream of the confluence of the intermittent stream that flows from the area east of the landfill to Canada Creek and one sediment sample will be collected from Canada Creek downstream of the landfill. The sediment samples will be collected from the bed of the stream to a depth of six-inches.

Sediment samples will be collected using either a hand auger or a ponar dredge following the procedures detailed below:

Hand Auger Sediment Sampling Procedures:

1. Advance the stainless steel pre-cleaned hand auger into the sediment until the bucket is full (approximately 6 inches).

2. Gently remove the auger from the water column to avoid loss of material.

3. Remove the sample from the bucket auger with a stainless steel pre-cleaned spatula or lab spool and place into a pre-cleaned stainless steel bowl or on plastic sheeting.

4. Use a stainless steel pre-cleaned spatula or lab spoon to mix and homogenize the sample by the method of cone and quarter except samples that are to be analyzed for VOCs. Collect volatile organic samples as discrete grab samples without mixing in the field. The extent of mixing will depend on the nature of the sample and will continue until the sample achieves a consistent physical appearance. After mixing is completed, divide the sample into quarters and fill containers by scooping sample material alternately from each quarter.

5. Place the sample container(s) on ice in a cooler for transport to the laboratory. Complete all chain-of-custody documents and record in the field log book.

6. Decontaminate sampling equipment after use and/or between sample locations.

Ponar Dredge Sediment Sampling Procedure:

1. Using a weighted measuring tape, obtain a measurement to the bottom of the stream, river, or pond. Enter the depth in the field logbook.

2. Obtain the dredge and place the jaws in the lock-open position.

3. Secure a rope, cord, or cable to allow the dredge to reach from field person to the sediment material. For applications where depths greater than three (3) feet are encountered, the end of the cord or cable should be fixed to the boat, raft, or dock from which the sampler is being lowered.

4. Position the dredge directly above the point where the sample is collected. For streams and small brooks where wading is needed, stand downstream from the sample point and take care not to disturb the bottom materials directly upstream of or on the sample collection area.

5. Check to be sure that the jaws of the dredge are open and that the connection cord or line is free to follow the dredge. Drop the dredge into the water and allow it to progress downward to the bottom.

6. When the dredge has reached the bottom, tug the connection cord hard three times quickly. (In shallow streams and brooks, it will probably be sufficient to tug only once and then slowly raise the sampler.) Raise the dredge slowly for the first few feet, and at a rate comfortable for the field person. Take care not to let the dredge bounce when raising.

7. When the dredge is raised, place it in a clean basin. Position the dredge on its side and open slowly.

8. If sediment material is found inside the dredge, place selected sediment portions in the appropriate sample container(s) according to the sample volumes required for analyses. NOTE: If the dredge is empty, make a second and third effort at the same point and then attempt additional points. When sampling a small stream, make additional sampling attempts using a trowel or shovel. Trowel or shovel procedures are similar, except those samples are obtained directly and raised quickly to the surface to reduce washing of the sediment sample by stream flow.

9. At the completion of work at each sediment sample point, decontaminate the sampling materials (i.e., trowels, shovels, dredges and basin) prior to the start of sampling at the next point.

2.5 Ground Water Elevation Data

Beginning in September 2002, ground water elevation data will be collected from all on-site

ground water monitoring wells in order to obtain the most information possible on the relationship between ground water elevations within the landfill containment wall and outside the containment wall. The ground water elevation data will be provided in the monthly quarterly reports. In addition, a Freedom of Information Act request will be submitted to the NYSDEC to obtain ground water elevation data and monitoring well details for the ground water monitoring wells at the Oneida County ash landfill located adjacent to the City of Rome landfill.

2.6 Monitoring Well Ground Water Sample Collection and Analysis

During the March 2003 quarterly ground water monitoring event, ground water samples will be collected from monitoring wells MW-1D, MW-2S, MW-2D, MW-2I, PZ-1 and MW-7S in addition to the ground water monitoring wells that are sampled as part of the on-going operation and maintenance program. Also a Freedom of Information Act request will be submitted to the NYSDEC to obtain ground water analytical data from the monitoring wells associated with the Oneida County ash landfill.

3.0 Sample Analytical Program

Ground water, surface water, leachate seep and sediment analytical data obtained during the Remedial Investigation indicated that PCBs, pesticides, semi-volatile organics and most metals were not present at concentrations of concern in environmental media in the vicinity of the landfill. Therefore, the samples collected during this investigation will be analyzed for the Part 360 Routine parameters plus volatile organics. Any aqueous and sediment samples collected adjacent to the walkway on the old railroad bed will be analyzed for the NYSDEC Target Compound/Target Analyte list of parameters, since this area represents a potential route of human exposure to any seeps that may be associated with the landfill.

All samples will be analyzed within the holding times specified in the most current version of the NYSDEC, Analytical Services Protocol (ASP). A complete NYSDEC Category B data deliverable package will be provided by the laboratory. Samples will be analyzed by Life Sciences Laboratory, Inc, which is a CLP ASP approved laboratory.

4.0 Report

Following the receipt of the sample analytical data, a report will be prepared that details the findings of the off-site investigation. This report will include the location of any ground water/leachate seeps that are identified and the location of any samples that are collected. The report will present the results of the laboratory analysis of the samples. If the data indicate constituents associated with the landfill leachate are present at elevated concentrations in the environmental samples, then a report will be prepared that analyzes alternatives for controlling the movement of landfill leachate away from the landfill.